

## FILE ERDET

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6     SUITE : PCB LAYOUT  
7     PROGRAM TITLE : REDAL 20  
8     ROUTINE TITLE : ERDET  
9  
10    / THIS PROGRAM SOURCE FILE IS SUPPLIED IN CONFIDENCE TO THE  
11    / CUSTOMER: THE CONTENTS OR DETAILS OF ITS OPERATION MAY ONLY  
12    / BE DISCLOSED TO PERSONS EMPLOYED BY THE CUSTOMER WHO REQUIRE  
13    / A KNOWLEDGE OF THE SOFTWARE CODING TO CARRY OUT THEIR JOB.  
14    / DISCLOSURE TO ANY OTHER PERSON MUST HAVE THE PRIOR AUTHORISATION  
15    / FROM THE DIRECTORS OF REDAC SOFTWARE LIMITED.  
16  
17    / PURPOSE: TO BUILD UP ALL THE CONNECTION TREES USING THE DISPLAY  
18    / FILE AS WORKING SPACE.  
19  
20    / CALLING SEQUENCE AND DESCRIPTION OF ARGUMENTS:  
21    / CALL ERDET(SPAR1,EOCNAD)  
22    / SPAR1 ADDRESS OF TREE ARRAY  
23    / EOCNAD END OF CONNECTIONS POINTER  
24  
25    / REGISTERS USED: AC, MQ, AIR 10, 15 . IX  
26  
27    / COMMON AREAS: COMPS, EOCMAD, CONNX, ROUTE  
28  
29    / GLOBALS : ERDET, .DA, TREE2, DFADDR  
30  
31  
32    /-----  
33    / GLOBL ERDET, .DA, TREE2, DFADDR  
34    / OVERLAY MOD 16/6/72  
35    / UPDATED FOR 44K ON 9APR73  
36    00000 R 000000 A COMP .CBD COMPS 1  
37    00001 R 000000 A EOCMAD .CBD EOCMAD 1  
38    00002 R 000000 A CONNS .CBD CONNX 1  
39    00003 R 000000 A ROUTES .CBD ROUTE 1  
40    . IODEV 1,6  
41    00004 R 740040 A ERDET XX  
42    00005 R 120441 E JMS\* .DA  
43    00006 R 600011 R JMP .+3  
44    00007 R 000000 A SPAR1 0  
45    00010 R 000000 A EOCNAD 0  
46    00011 R 220002 R ROUT LAC\* CONNS  
47    00012 R 040414 R DAC CONNAD#  
48    00013 R 220000 R LAC\* COMP  
49    00014 R 040413 R DAC COMPAD#  
50    00015 R 200007 R LAC SPAR1  
51    00016 R 060442 R DAC\* (15  
52  
      / SET UP LOOP TO FIND TREES FOR ALL CONN WIDTHS  
      /

53 00017 R 777770 A LAW -10  
54 00020 R 040421 R DAC ERDCNT\* / NUMBER OF POSSIBLE WIDTHS  
55 00021 R 200421 R ERDLUP LAC ERDCNT  
56 00022 R 740001 A CMA  
57 00023 R 040436 R DAC WIDTH\* / WIDTH OF CURRENT TREE SERIES  
58 /  
59 / CLEAR ALL DISPLAY FILE ADDRESSES  
60 /  
61 00024 R 200414 R LAC CONNAD  
62 00025 R 721000 A PAX  
63 00026 R 140433 R DZM SCAN\*  
64 00027 R 220010 R LAC\* EOCNAD  
65 00030 R 723777 A AAC -1  
66 00031 R 040420 R DAC ENDCO\* / 1ST FREE WORD IN CONNS  
67 00032 R 540433 R SAD SCAN  
68 00033 R 600230 R JMP TREED+2 / NO CONNS. STORE -1 IN ARRAY  
69 00034 R 230433 R CLUP LAC\* SCAN,X  
70 00035 R 500443 R AND (777  
71 00036 R 740031 A TCA  
72 00037 R 040430 R DAC NOFCNS\* / - NO OF CONNS  
73 00040 R 200433 R LUPC LAC SCAN  
74 00041 R 340444 R TAD (3  
75 00042 R 040433 R DAC SCAN  
76 00043 R 230433 R LAC\* SCAN,X  
77 00044 R 500445 R AND (600000  
78 00045 R 070433 R DAC\* SCAN,X  
79 00046 R 440430 R ISZ NOFCNS  
80 00047 R 600040 R JMP LUPC  
81 00050 R 440433 R ISZ SCAN  
82 00051 R 200433 R LAC SCAN  
83 00052 R 540420 R SAD ENDCO  
84 00053 R 741000 A SKP  
85 00054 R 600034 R JMP CLUP / CONTINUE  
86 /  
87 / FIND THE FIRST CONN WITH A CLEAR DF.  
88 / BUILD UP A TREE FOR IT AND MARK  
89 / ALL THE DISPLAY FILE NUMBERS  
90 /  
91 00055 R 140433 R DZM SCAN  
92 00056 R 230433 R CLUP2 LAC\* SCAN,X  
93 00057 R 500443 R AND (777  
94 00060 R 740031 A TCA  
95 00061 R 040430 R DAC NOFCNS  
96 00062 R 200433 R LUPC2 LAC SCAN  
97 00063 R 340444 R TAD (-2  
98 00064 R 040433 R DAC SCAN  
99 /  
100 / CHECK CONN IS CORRECT WIDTH  
101 /  
102 00065 R 200433 R LAC SCAN  
103 00066 R 340446 R TAD (-2  
104 00067 R 040434 R DAC SKAN\*

105 00070 R 230434 R LRS\* SKAN,X  
106 00071 R 640506 A LRS 6  
107 00072 R 500447 R AND (?)  
108 00073 R 540436 R SAD WIDTH  
109 00074 R 741000 A SKP  
110 00075 R 600102 R JMP MBAK / NOT CORRECT WIDTH  
111 00076 R 230433 R LAC\* SCAN,X  
112 00077 R 500450 R AND (177777?  
113 00100 R 741200 A SNA  
114 00101 R 600111 R JMP MARK / MARK THIS TREE  
115 00102 R 440430 R MBAK ISZ NOFCNS  
116 00103 R 600062 R JMP LUPC2  
117 00104 R 440433 R ISZ SCAN  
118 00105 R 200433 R LAC SCAN  
119 00106 R 540420 R SAD ENDCO  
120 00107 R 600226 R JMP TREED / ALL TREES MARKED  
121 00110 R 600056 R JMP CLUP2  
122  
123  
124 00111 R 160015 A MARK DZM\* 15 / WORD COUNTER  
125 00112 R 200436 R LAC WIDTH  
126 00113 R 060015 A DAC\* 15 / STORE WIDTH  
127 00114 R 200433 R LAC SCAN  
128 00115 R 340451 R TAD (-1  
129 00116 R 040416 R DAC DUMP#  
130 00117 R 200436 R LAC WIDTH  
131 00120 R 660706 A ALSS 6  
132 00121 R 652000 A LMQ  
133 00122 R 230416 R LAC\* DUMP,X  
134 00123 R 500452 R AND (?)  
135 00124 R 640002 A OMQ / KEEP BUILDING FIRST WORD FOR TREE  
136 00125 R 652000 A LMQ  
137 00126 R 200416 R LAC DUMP  
138 00127 R 340451 R TAD (-1  
139 00130 R 040416 R DAC DUMP  
140 00131 R 230416 R LAC\* DUMP,X  
141 00132 R 500453 R AND (777000  
142 00133 R 640002 A OMQ  
143 00134 R 060015 A DAC\* 15 / FIRST NODE  
144 00135 R 220442 R LAC\* (15  
145 00136 R 040144 R DAC TARG3 / ADDR FOR TREE TO START BUILDING IN  
146 00137 R 340446 R TAD (-2  
147 00140 R 040146 R DAC TARG5 / ADDR OF WORD COUNTER FOR TREE  
148 00141 R 160146 R DZM\* TARG5 / CLEAR COUNTER  
149 00142 R 120440 E JMS\* TREE2  
150 00143 R 600150 R JMP .+5  
151 00144 R 000000 A TARG3 0 / ARRAY BASE  
152 00145 R 000454 R TARG4 .DSA (0 / ANTNODE  
153 00146 R 000000 A TARG5 0 / WORD COUNT  
154 00147 R 000000 A TARG6 / CONNECTIONS ADDRESS  
155  
156 00150 R 100233 R JMS ASORT / SORT TREE INTO ALPHANUMERIC ORDER

157  
158  
159  
160 00151 R 220442 R // INCREMENT A I 15 TO ALLOW FOR TREE SIZE  
161 00152 R 360146 R LAC\* (15  
162 00153 R 340451 R TAD\* TARG5  
163 00154 R 060442 R TAD (-1  
164  
165  
166  
167 00155 R 200414 R DAC\* (15  
168 00156 R 721000 A // MARK ALL CONNS WITH NODES ON TREE  
169 00157 R 140427 R LAC CONNAD  
170 00160 R 220146 R PAX  
171 00161 R 740031 A DZM MSCAN#  
172 00162 R 040423 R LAC\* TARG5  
173 00163 R 230427 R TCA  
174 00164 R 500443 R DAC MCNTR# / -NO OF WORDS ON TREE  
175 00165 R 740031 A MCLUP LAC\* MSCAN,X  
176 00166 R 040425 R AND (777  
177 00167 R 230427 R TCA  
178 00170 R 500453 R DAC MNOCFN#  
179 00171 R 652000 A LAC\* MSCAN,X  
180 00172 R 440427 R AND (777000  
181 00173 R 230427 R LMQ / STORED IN MQ  
182 00174 R 500452 R MLUPC ISZ MSCAN  
183 00175 R 640002 A LAC\* MSCAN,X  
184 00176 R 040435 R AND (77  
185 00177 R 440427 R OMQ / PACK WORD  
186 00200 R 440427 R DAC TEMP#  
187 00201 R 200423 R ISZ MSCAN  
188 00202 R 040424 R ISZ MSCAN / PTS TO DF WORD  
189 00203 R 200144 R LAC MCNTR#  
190 00204 R 340451 R DAC MCOUNT  
191 00205 R 060455 R LAC TARG3  
192 00206 R 220010 A TAD (-1  
193 00207 R 540435 R DAC\* (10  
194 00210 R 600222 R SSLOOP LAC\* 10  
195 00211 R 440424 R SAD TEMP  
196 00212 R 600206 R JMP MARKIT  
197 00213 R 440425 R ISZ MCOUNT#  
198 00214 R 600172 R JMP SSLOOP  
199 00215 R 440427 R MARKED ISZ MNOCFN  
200 00216 R 200427 R JMP MSCAN  
201 00217 R 540420 R LAC MSCAN  
202 00220 R 600102 R SAD ENDCO  
203 00221 R 600163 R JMP MBAK  
204 00222 R 230427 R JMP MCLUP  
205 00223 R 340456 R MARKIT LAC\* MSCAN,X  
206 00224 R 070427 R TAD (1  
207 00225 R 600213 R DAC\* MSCAN,X  
208 //

209 00226 R 440421 R TAD ISZ ERDCNT  
210 00227 R 600021 R JMP ERDLUP  
211 00230 R 200451 R LAC (-1  
212 00231 R 060015 A DAC\* 15 / END OF ARRAY MARKER  
213 /  
214 /  
215 00232 R 620004 R JMP\* ERDET / EXIT  
216 /  
217 // SUBROUTINE ASORT. SORTS AN ARRAY OF POINTERS  
218 // INTO ALPHANUMERIC ORDER  
219 /  
220 00233 R 740040 A ASORT XX  
221 00234 R 200144 R LAC TARG3 / BASE ADDRESS  
222 00235 R 340451 R TAD (-1  
223 00236 R 060455 R DAC\* (10  
224 00237 R 340456 R TAD (1  
225 00240 R 040431 R DAC POINT\* / PRESENT PTR  
226 00241 R 040412 R DAC BPTR\* / BEST PTR  
227 00242 R 220146 R LAC\* TARG5  
228 00243 R 540456 R SAD (1  
229 00244 R 620233 R JMP\* ASORT  
230 00245 R 740001 A CMA  
231 00246 R 340457 R TAD (2  
232 00247 R 040415 R DAC COUNT\* / INNER LOOP  
233 00250 R 040422 R DAC KOUNT\* / OUTER LOOP  
234 00251 R 220010 A BLOOP LAC\* 10 / START OUTER LOOP  
235 00252 R 100304 R JMS VALUE  
236 00253 R 040410 R DAC BAC\*  
237 00254 R 641002 A LACQ  
238 00255 R 040411 R DAC BMQ\*  
239 00256 R 220010 A ILOOP LAC\* 10 / START INNER LOOP  
240 00257 R 100304 R JMS VALUE  
241 00260 R 100356 R JMS COMPAR / SWAP IF NECESSARY  
242 00261 R 440415 R ISZ COUNT  
243 00262 R 600256 R JMP ILOOP  
244 00263 R 220431 R LAC\* POINT  
245 00264 R 652000 A LMQ  
246 00265 R 220412 R LAC\* BPTR / BEST POINTER  
247 00266 R 060431 R DAC\* POINT  
248 00267 R 641002 A LACQ  
249 00270 R 060412 R DAC\* BPTR / SWAPPED OVER  
250 00271 R 200431 R LAC POINT  
251 00272 R 060455 R DAC\* (10 / MOVE 1 WORD UP THE ARRAY  
252 00273 R 340456 R TAD (1  
253 00274 R 040431 R DAC POINT  
254 00275 R 040412 R DAC BPTR  
255 00276 R 200422 R LAC KOUNT  
256 00277 R 340456 R TAD (1  
257 00300 R 040415 R DAC COUNT  
258 00301 R 440422 R ISZ KOUNT  
259 00302 R 600251 R JMP BLOOP  
260 00303 R 620233 R JMP\* ASORT / EXIT

261  
262  
263  
264  
265  
266       00304 R 740040 A                   / SUBROUTINE VALUE. ENTER WITH A PACKED  
267       00305 R 040417 R                   / RELATIVE PTR TO COMP IN AC AND RETURN  
268       00306 R 744000 A                   / WITH ALPHANUMERIC VALUE OF NAME IN AC  
269       00307 R 640511 A                   / AND MQ. BLANKS COUNT AS ZERO  
270       00310 R 744010 A                   VALUE XX  
271       00311 R 040416 R                   DAC DUMP2\*  
272       00312 R 744010 A                   CLL  
273       00313 R 340416 R                   LRS 11  
274       00314 R 340413 R                   RCL / \*2  
275       00315 R 340456 R                   DAC DUMP  
276       00316 R 040432 R                   RCL / \*4  
277       00317 R 220432 R                   TAD DUMP\* / \* 6  
278       00320 R 040407 R                   TAD COMPAD  
279       00321 R 440432 R                   TAD (1  
280       00322 R 200417 R                   DAC PTR\* / PTR TO FIRST NAME  
281       00323 R 500452 R                   LAC\* PTR  
282       00324 R 744010 A                   DAC ACST\*  
283       00325 R 040417 R                   ISZ PTR  
284       00326 R 220432 R                   LAC DUMP2  
285       00327 R 500460 R                   AND (77 / PAD NUMBER  
286       00329 R 340417 R                   RCL  
287       00331 R 040426 R                   DAC DUMP2  
288       00332 R 200407 R                   LAC\* PTR  
289       00333 R 500461 R                   AND (774000 / TOP 10 BITS  
290       00334 R 540462 R                   SAD (200000 / LOOK FOR LEADING BLANK  
291       00335 R 741000 A                   SKP  
292       00336 R 600350 R                   JMP LJUST  
293       00337 R 200426 R                   LAC MQST  
294       00340 R 652000 A                   LMQ  
295       00341 R 200407 R                   LAC ACST  
296       00342 R 744000 A                   CLL  
297       00343 R 640607 A                   LLS 7  
298       00344 R 040407 R                   DAC ACST  
299       00345 R 641002 A                   LACQ  
300       00346 R 040426 R                   DAC MQST  
301       00347 R 600332 R                   JMP RETRY  
302       00350 R 200426 R                   LJUST LAC MQST  
303       00351 R 744020 A                   RCR  
304       00352 R 652000 A                   LMQ  
305       00353 R 200407 R                   LAC ACST  
306       00354 R 500463 R                   AND (377777  
307       00355 R 620304 R                   JMP\* VALUE  
308  
309       / SUBROUTINE COMPAR. ENTER WITH VALUE IN  
310       / AC AND MQ. COMPARE WITH VALUE IN  
311       / BAC AND BMQ AND SWAP IF VALUE IN AC AND MQ LESS  
312

313 00356 R 740040 A COMPAR XX  
 314 00357 R 040407 R DAC ACST  
 315 00360 R 641002 A LACQ  
 316 00361 R 040426 R DAC MQST  
 317 00362 R 200407 R LAC ACST  
 318 00363 R 740001 A CMA  
 319 00364 R 340456 R TAD (1  
 320 00365 R 340410 R TAD BAC / COMPAR WITH BEST VALUE  
 321 00366 R 741100 A SPA  
 322 00367 R 620356 R JMP\* COMPAR / NOT BETTER  
 323 00370 R 740200 A SZA  
 324 00371 R 600400 R JMP SWAPIT / YES- BETTER.  
 325 00372 R 200426 R LAC MQST  
 326 00373 R 740001 A CMA  
 327 00374 R 340456 R TAD (1  
 328 00375 R 340411 R TAD BMQ  
 329 00376 R 741100 A SPA  
 330 00377 R 620356 R JMP\* COMPAR / NOT BETTER  
 331 00400 R 200407 R SWAPIT LAC ACST\*  
 332 00401 R 040410 R DAC BAC / BEST AC VALUE  
 333 00402 R 200426 R LAC MQST\*  
 334 00403 R 040411 R DAC BMQ / BEST MQ VALUE  
 335 00404 R 220455 R LAC\* (10 / ARRAY POINTER  
 336 00405 R 040412 R DAC BPTR / BEST POINTER  
 337 00406 R 620356 R JMP\* COMPAR  
 338 //  
 339 //  
 340 //  
 341 //  
 342 000000 A .END

00437 R 000437 E \*E  
 00440 R 000440 E \*E  
 00441 R 000441 E \*E  
 00442 R 000015 A \*L  
 00443 R 000777 A \*L  
 00444 R 000003 A \*L  
 00445 R 600000 A \*L  
 00446 R 777776 A \*L  
 00447 R 000007 A \*L  
 00450 R 177777 A \*L  
 00451 R 777777 A \*L  
 00452 R 000077 A \*L  
 00453 R 777000 A \*L  
 00454 R 000000 A \*L  
 00455 R 000010 A \*L  
 00456 R 000001 A \*L  
 00457 R 000002 A \*L  
 00460 R 777400 A \*L  
 00461 R 774000 A \*L  
 00462 R 200000 A \*L  
 00463 R 377777 A \*L

SIZE=00464 NO ERROR LINES

## PAGE 8 ERDET CROSS REFERENCE

IACST	00407	278	288	295	298	305	314	317	331
ASORT	00233	156	220*	229	260				
BAC	00410	236	320	332					
BLOOP	00251	234*	259						
BMQ	00411	238	328	334					
BPTR	00412	226	246	249	254	336			
CLUP	00034	69*	85						
CLUP2	00056	92*	121						
COMP	00000	35*	47						
COMPAD	00413	48	274						
COMPAR	00356	241	313*	322	330	337			
CONNAD	00414	46	61	167					
CONNS	00002	37*	45						
COUNT	00415	232	242	257					
DFADDR	00437	32							
DUMP	00416	129	133	137	139	140	271	273	
DUMP2	00417	267	280	283	286				
ENDCO	00420	66	83	119	201				
EOCMAD	00001	36*	36						
EOCNAD	00010	44*	64						
ERDCNT	00421	54	55	209					
ERDET	00004	1	32	40*	215				
ERDLUP	00021	55*	210						
ILOOP	00256	239*	243						
KOUNT	00422	233	255	258					
LJUST	00350	292	302*						
LUPC	00040	73*	80						
LUPC2	00062	96*	116						
MARK	00111	114	124*						
MARKED	00213	197*	207						
MARKIT	00222	194	204*						
MBAK	00102	110	115*	202					
MCLUP	00163	173*	203						
MCNTR	00423	172	187						
MCOUNT	00424	188	195						
MLUPC	00172	180*	198						
MNOFCN	00425	176	197						
MQST	00426	287	293	300	302	316	325	333	
MSCAN	00427	169	173	177	180	181	185	186	199
		200	204	206					
NOFCNS	00430	72	79	95	115				
POINT	00431	225	244	247	250	253			
PTR	00432	276	277	279	284				
RETRY	00332	288*	301						
ROUT	00011	45*							
ROUTES	00003	38*							
SCAN	00433	63	67	69	73	75	76	78	81
		82	91	92	96	98	102	111	117
		118	127						
SKAN	00434	104	105						
SPAR1	00007	43*	49						
<del>SLOOP</del>	00206	192*	196						
SPAPIT	00400	324	331*						

## PAGE 9 ERDET CROSS REFERENCE

TARG3	00144	145	151*	189	221
TARG4	00145	152*			
TARG5	00146	147	148	153*	161
TARG6	00147	154*			170
TEMP	00435	184	193		
TREED	00226	68	120	209*	
TREE2	00440	32	149		
VALUE	00304	235	240	266*	307
WIDTH	00436	57	108	125	130
.DA	00441	32	41		